

## ***Technology Administration***

Indiana Recycling Coalition, Inc.

Email Received 10/26/2004

Dear Ms. Daly,

I am writing in response to a request for comments from your office on the issue of electronics. Please find attached a cover letter and the E-Scrap Action Program Recommendations from the Indiana Recycling Coalition.

Do not hesitate to contact me if you have any questions or would like clarification on any of our recommendations.

Warm regards,

Michelle Cohen  
Executive Director  
Indiana Recycling Coalition, Inc.



## INDIANA RECYCLING COALITION

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A Not-For-Profit Corporation

October 26, 2004

Ms. Laureen Daly  
Technology Administration  
U.S. Department of Commerce

via email to: [Ldaly@technology.gov](mailto:Ldaly@technology.gov)

Dear Ms. Daly:

**I am pleased to share the enclosed recommendations with you in response to your recent request for comments on the topic of e-scrap.**

First, I will share with you the background of these recommendations. To tackle the burgeoning problem of electronics waste, the IRC developed our **E-Scrap Action Program (ESAP)**. The ESAP kicked off in May, 2003, bringing together key stakeholders from across the state who are affected by the lack of a comprehensive infrastructure for proper electronics management (reuse, recycling and proper disposal). The IRC serves as an important information source and facilitator for the **more than 100 stakeholder organizations, including: government agencies; non-profit and for-profit reuse and recycling organizations; trash haulers and landfill operators; universities; businesses that generate e-scrap; and others.**

This group has been working to develop recommendations for better end-of-life management for computers and other consumer electronics. Throughout the process we have determined that developing a strong and sustainable infrastructure is a critical component in building a cost-effective and efficient statewide e-scrap management system. We have also recognized that refurbishing and reusing electronics allow for the best possible use of the resource, providing job training and youth development opportunities, and helping to close the digital divide by providing access to technology to disadvantaged populations. **The enclosed consensus-based recommendations are the culmination of the discussions held and issues debated by these stakeholders over the course of one year.** These recommendations were created through a deliberate and careful process, and were approved by the IRC's advocacy committee and board of directors. All six of the components of the recommendations are meant to be considered as a package. For example, education and infrastructure are intrinsically linked to each other. We also carefully formulated the text so that it supports the bulleted points, and neither should stand alone.

While the format of our recommendations does not correspond directly to your four areas of focus, I believe that most of our recommendations address them nonetheless. The recommendations that don't fit into areas one through three do address area four (government role in electronics recycling).

The ESAP process and its outcome are unprecedented in the realm of solid waste issues in Indiana. For this reason, and for their content, we are confident that you will find these recommendations as compelling as we do.

Thank you for taking the time to consider our recommendations,

Michelle M. Cohen  
Executive Director

cc: Kate Krebs, Executive Director, National Recycling Coalition

The Indiana Recycling Coalition (IRC) was established as a 501c3 non-profit organization in 1989, and is a leader in waste reduction, reuse and recycling issues across the state. The IRC represents concerned citizens, state and local government officials, business, industry, and environmental groups.

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# **Indiana Recycling Coalition**

## **E-Scrap Action Program**

### **Recommendations**

#### **August, 2004**

For more than one and a half years the Indiana Recycling Coalition (IRC), a statewide 501 (c)(3) educational organization, has been developing the E-Scrap Action Program (ESAP). ESAP is a project that targets electronics waste (e-scrap) as a major priority for waste management in the state of Indiana, because this waste stream can be hazardous to the environment and costly to manage.

The initial phase of the E-Scrap Action Program brought together key stakeholders from across the state to discuss issues of concern and solutions for the future of e-scrap in Indiana. Stakeholders represented solid waste districts, cities and towns, state associations (such as the Association of Indiana Solid Waste Districts, and the Indiana Association of Cities and Towns), private sector generators (such as Eli Lilly, Subaru, Chrysler, and Raytheon), state governments (Environmental Management, Commerce, and Administration), federal government (EPA), universities (such as Indiana University, Ball State and Purdue), representatives of the solid waste industry (Waste Management and Republic Services), private sector electronics recyclers, reuse organizations and others.

This successful one-year process resulted in a series of preliminary recommendations from the multi-stakeholder group. The recommendations present ways in which the state can address the issue of e-scrap from policy, regulatory, legislative and educational perspectives. These recommendations are inter-related and the intent is that they will be considered as a comprehensive “package” and not individually. The recommendations fall into six interrelated areas:

- Public education
- Funding mechanisms
- Landfill/incinerator disposal ban
- Prison partnerships
- Procurement
- Asset management

#### **Public Education**

There has been very little education on e-scrap issues to date in Indiana. The need to educate Hoosiers about proper electronics management was identified in virtually every discussion that took place during the ESAP stakeholder process. There is a great need for information: many individuals and organizations need accurate information to make the right decisions about e-scrap management; the general public is unaware of potential

hazards posed by e-scrap; many businesses are unaware of the regulations governing disposal of electronic equipment; and there is a general lack of awareness of the options available for managing e-scrap or for purchasing less toxic electronic devices. Therefore, education becomes critical as a recommendation for action, and should also be considered an integral part of all other recommendations to follow.

**Recommendation:**

- ❑ Indiana should develop and implement a comprehensive and coordinated education campaign with a central theme, using a multi-media approach, and targeting a wide range of audiences, such as businesses, schools, and consumers.

**Funding Mechanisms**

Stakeholders agreed that establishing ongoing e-scrap collection is essential; that state and local government cannot bear the entire cost of e-scrap management; and that state government will necessarily be involved in setting up and regulating the collection mechanism.

**Recommendations:**

- ❑ Initially, Indiana should implement an Advanced Recovery Fee (ARF), a fee that is added at the time of purchase (much like the existing fee on tires). This fee would help to cover the cost of managing current material and would support additional e-scrap programs at the local level.
- ❑ Indiana should move towards “Extended Producer Responsibility” (EPR) through legislation that requires manufacturers to assume the responsibility for managing their equipment at the end of its useful life. EPR (1) pushes manufacturers to improve recyclability; and (2) provides lower operating costs for collection programs.
- ❑ The Indiana Department of Commerce and Indiana Department of Environmental Management should make e-scrap a priority issue, and help fund start-up of e-scrap projects through existing state grant and loan programs. In particular, the Indiana Department of Commerce should work to develop funding for the private sector, specifically to encourage an electronics market development program.
- ❑ Constituents of state funding programs should be surveyed on specific funding needs, and recommendations forwarded to the Indiana Department of Commerce and the Indiana Department of Environmental Management.

**Landfill/Incinerator Disposal Ban**

Most electronic equipment today is landfilled instead of recycled because it is currently the most economic and convenient method of management. The high concentration of lead in cathode ray tubes (CRTs) in computer monitors and televisions, however, cause these items to fail the Toxic Characteristic Leaching Procedure (TCLP). The TCLP is the

procedure recognized by the US Environmental Protection Agency for measuring the potential toxicity of waste materials, and materials failing the TCLP are regulated as a hazardous waste. When incinerated, concerns arise over hazardous materials released into the air or exposure to hazardous materials from handling and residuals in the ash. Although residential and other small quantities of these materials are technically exempt from hazardous waste regulations and current landfill leachate test do not show significant levels of lead, the stakeholders agreed that it is time to consider further regulation of CRTs, and to consider regulating other electronic equipment when appropriate. For a successful CRT ban, adequate funding and an adequate infrastructure must be in place before a disposal ban is implemented. While a consensus was reached in this issue, there is not unanimous acceptance of this recommendation. Landfill operators, in particular, may not support the disposal ban.

### **Recommendations:**

- ❑ Indiana should consider a statewide ban on final disposal of CRTs, and the ban should apply to residential as well as materials generated by businesses, schools and units of government.
- ❑ A collection and funding infrastructure must be in place prior to implementation of a disposal ban

Indiana should consider adding other electronic equipment to the disposal ban after a CRT disposal ban is in effect, as TCLP results become available, and as collection infrastructure is developed.

### **Prison Partnerships**

The use of prison labor in e-scrap management offers a number of potential benefits for collection programs, private sector recyclers, and the prison system. These partnerships would support private sector recyclers, not compete with them, by providing services that cannot be provide cost-effectively in the private sector—such as the de-manufacturing of computer monitors. Prison partnerships could lower the cost for e-scrap management for Indiana communities, schools, businesses, and others.

However, the use of prison labor in other states has caused some controversy, such as competition with the private sector, or exposure to workplace hazards. ESAP stakeholders agree that while there is no significant opposition to the prison partnership concept, as presented in the stakeholder discussions, it is essential to address any concerns that arise as partnerships develop, such as creating a level playing field among recyclers and properly training the workforce.

### **Recommendations:**

- ❑ Indiana should seriously consider, and continue to explore the feasibility of, developing prison partnerships in e-scrap management.
- ❑ Partnerships should focus on providing service that cannot be provided cost effectively in the private sector.

**Procurement**

Electronic equipment is a problem at the end of its useful life because the disposal issues are not considered at the time of purchase. If procurement officials considered potential hazards, or improved recyclability, disposal issues could be mitigated. This recommendation also applies needed pressure to manufacturers of electronics equipment to manufacture and make available more environmentally sound products.

**Recommendation:**

- ❑ Indiana should establish a program to educate local and state procurement agents on the hazards of electronics they are purchasing and provide them with tools to assist them in buying greener electronic equipment.

**Asset Management/Auctions**

A significant amount of electronic equipment is “disposed” of through government or corporate auctions, through donations, etc. In these cases, the burden of final disposal is simply shifted to another party. This is especially the case in bulk auction lots containing non-working or unwanted equipment, a common practice of government surplus programs.

**Recommendations:**

- ❑ Indiana should adopt more responsible e-scrap management practices than are currently used under the auction system.
- ❑ Local and state government agencies should be encouraged to bid for responsible e-scrap reuse/recycling services instead of relying on public auctions.
- ❑ Local and state surplus agencies should be educated on the hazards of electronics and provided with information and tools to discourage public auction of e-scrap in bulk lots.

For more information, contact:



***Indiana Recycling Coalition's E-Scrap Action Program***

*PO Box 7108*

*Bloomington, Indiana 47407-7108*

*Phone: 812/988-9946; Fax: 812/988-9947*

*Revised August 25, 2004*



## International Association of Electronics Recyclers

PO Box 16222•Albany, NY 12212-6222•Phone: (888) 989-4237•Fax: (877) 989-4237•[www.iaer.org](http://www.iaer.org)

Laureen Daly  
Technology Administration  
U.S.Department of Commerce

October 15, 2004

Dear Ms. Daly,

The International Association of Electronics Recyclers (IAER) appreciates the opportunity to respond to the Department of Commerce invitation to provide comments on the end of life management of electronics. The IAER is the first and only trade association representing and serving the electronics recycling industry – with over 100 member organizations in 15 countries. Unfortunately, the IAER did not have the opportunity to participate in the recent panel session organized by the Department of Commerce, but believes that the electronics recycling industry can contribute to the solutions to the national challenge in electronics recycling.

The IAER was formed six years ago with the primary mission of helping to build an effective and efficient infrastructure for electronics recycling. As a result, it has focused its efforts on developing a variety of services to support and improve that infrastructure. A number of these services may be of interest and use to the Department of Commerce in the preparation of its report to Congress. Attached, for your reference, is a summary of those services.

In response to the specific request for comments related to the four topics of interest to the Department of Commerce, attached is a summary of the IAER's perspective and recommendations on "Industry Issues". Hopefully this will be useful in the preparation of the report.

The IAER would be glad to provide more details on its services and/or comments and would welcome the opportunity to discuss this further with representatives of the Department of Commerce. The IAER has been working closely with other federal agencies (e.g., EPA, OFEE) and other stakeholder organizations for several years and looks forward to establishing a relationship with the Department of Commerce as well.

Thank you again for the opportunity to comment on this important subject.

Sincerely,

Peter R. Muscanelli  
IAER President



## IAER SERVICES

- **Web Site:** The IAER web site (<http://www.iaer.org/>) is the most comprehensive source of information about the electronics recycling industry that is used as a resource by all interested stakeholder groups (over 60K hits/month).
- **Industry Database:** The IAER developed and maintains the most comprehensive and up to date database on organizations involved in electronics recycling. Its online searchable Directory provides access to data on over 800 organizations worldwide. For more information, and access to the Directory, go to: <http://www.iaer.org/search/>
- **Electronics Recycling SUMMIT®:** The IAER created the Electronics Recycling SUMMIT® to foster and facilitate the development of an effective and efficient infrastructure for electronics recycling. The SUMMIT, held annually in conjunction with the International Symposium on Electronics and the Environment (ISEE) – co-sponsored with the Institute of Electrical and Electronics Engineers (IEEE) – is the premier event on the environmental and recycling aspects of electronics. For more information, including highlights of past SUMMIT events, go to: <http://www.iaer.org/summit/>
- **Electronics Recycling Industry Report** The IAER compiled and published the most comprehensive and up to date source of information, data and trends on electronics recycling – including a survey and research of the electronics recycling industry. For more information about the Report, including highlights, go to: <http://www.iaer.org/communications/indreport.htm>
- **Electronics Recycling Collaboration Network (ERCN):** The IAER facilitated the formation of a group of organizations to work together in support of electronics recycling and the SUMMIT event. The ERCN is comprised of the 10 major stakeholder organizations involved in electronics recycling – including the EPA and OFEE. For more information about the ERCN, including its membership, go to: <http://www.iaer.org/summit/collaboration.htm>
- **Education Programs:** The IAER offers courses for the continuing improvement of electronics recycling companies and the education of other interested parties through its International Electronics Recyclers Institute® (IERI). Included, as an example, is a popular course on “Best Management Practices for Operating Electronics Collection Programs”. For more information about the IERI Education Programs, go to: <http://www.iaer.org/members/education.htm>
- **Newsletter:** The IAER publishes a monthly electronic newsletter, available online, that provides a broad range of current information and developments in electronics recycling. To view the current and past issues of the Newsletter, go to: <http://www.iaer.org/communications/index.html>
- **Certification:** The IAER established a formal process to certify electronics recyclers to support and promote high standards of environmental quality and regulatory compliance as well as high quality business practices in the electronics recycling industry. This is the first and only third party audit process to certify electronics recyclers. For more information about the IAER Certification Program, including the IAER Certification Standard, go to: <http://www.iaer.org/communications/certification.htm>



### **Electronics Recycling Industry Issues and Potential Solutions**

- **Awareness** – Although there is increasing awareness of the electronics recycling industry by the public and private sector, there is limited and at times conflicting views of the real issues and facts. In addition, although there are many organizations and government agencies involved and interested in electronics recycling, there has only been limited success in focusing and coordinating the efforts and resources of these organizations on common solutions.
  - The IAER supports the development and maintenance of accurate information and data about the electronics recycling industry - including benchmarking to track how well the industry does in meeting its goals. The Electronics Recycling Industry Report – 2003 was a start towards this end – and should be continued and expanded.
  - Continuing education of individuals involved and interested in the management of end-of-life electronics is essential to achieving an understanding of the issues and facts as well as raising the level of performance in electronics recycling. Through the International Electronics Recyclers Institute® (IERI), the IAER plans to expand the scope and frequency of such educational services.
  - There are a number of web sites that attempt to provide information on electronics recycling; however there has been limited success in coordinating, collaborating and linking these resources to improve their effectiveness. The IAER, through the Electronics Recycling Collaboration Network (ERCN), will continue to work to improve such collaboration.
- **Standards and Best Practices** – There are no generally accepted standards or processes in place to select and qualify electronics recyclers as acceptable service providers for public and private contracts and programs. A wide variety of checklists, criteria and guidelines have been developed, but not coordinated or focused on a common solution. With “best practices” standards, there are exposures to inadequate management controls and processes for handling and disposing of scrap electronics.
  - As a growing and emerging industry, electronics recyclers must recognize the need of the sectors that they service to evaluate their capabilities and effectiveness. Continuous improvement can be achieved by establishing and raising industry standards and practices. Without industry standards for strong management systems, increased regulation is inevitable.
  - The IAER developed and implemented the first and only Certification Process for the electronics recycling industry – with third party verification of management systems, operational capabilities, and business practices. The industry needs help from the key stakeholder groups to acknowledge, use and improve this process to serve the needs of the customer communities.
  - The IAER has been working with federal agencies and programs towards this end and would welcome the opportunity to further this effort.
- **Legislation & Regulations** – Recent legislative activity on solutions to the end-of-life management of electronics has been primarily at the state level. Without a federal law, each state may enact a different approach, while the electronics recycling industry must serve its customers nationwide. Tracking and maintaining a current understanding of different legislation and regulations will increase the liability and expense of electronics recyclers, while inconsistencies have the potential to lead to confusion and conflicts. Too much regulation, on the other hand, increases paperwork, time and labor, which will increase the overall operating expense of the recycler.
  - The IAER supports a uniform, national approach to establishing a system for the collection and recycling of obsolete electronics. The need is primarily in related to consumer electronics where there is no infrastructure in place with adequate incentives for effective and efficient solutions.
  - The IAER believes that alliances within the industry and with key stakeholder groups, such as electronics manufacturers (OEMs) and government agencies have the most potential for developing mutually acceptable solutions. The Electronics Recycling Collaboration Network (ERCN) was established to foster and facilitate such an alliance, so the IAER recommends that it be used to help address this need.

October 15, 2004

International Association of Electronics Recyclers (IAER)

Iowa Department of Natural Resources, Energy and Waste Management  
Bureau

Email Received 10/26/2004

Ms. Daly:

The Iowa Department of Natural Resources, Energy and Waste Management Bureau wishes to submit the attached comments in regard to electronics recycling. The document is in Word 2003. Thank you for this opportunity to review and comment.

Brian Tormey, Chief  
Energy and Waste Management Bureau  
Iowa Department of Natural Resources  
502 E. 9th St.  
Des Moines, IA 50319-0034

**To: Department of Commerce, Office of Technology Policy**  
**From: Brian Tormey, Energy and Waste Management Bureau**  
**Date: October 18, 2004**  
**RE: Request for comments on Electronics Recycling**

The Iowa Department of Natural Resources, Energy and Waste Management Bureau wishes to submit the following comments in regard to electronics recycling.

**1) Definition of covered products:**

Electronics recycling should include televisions, monitors (CRTs and flat panels), laptop/notebook computers, CPUs, small peripherals (mice, keyboards, cables, speakers), and consumer desktop devices (printers and multifunction devices) generated by businesses, institutions, governments and households.

**2) Collection and the role of government in collection:**

- Those providing collection should receive a "collection incentive payment" to encourage a diversity of entities, who meet certain standards, to provide collection services to customers. The collection incentive payment would be paid to the collectors by processors contracted to provide environmentally sound processing.
- The payment of the collection incentive should be available to any collector that meets certain standards, including charities, private recycling businesses, retailers, manufacturers, and government programs. No entity should be required to provide collection, but the payment system should be established such that it is beneficial to and desirable for many entities to do so.
- Government should assist in educating the public on the need to recycle and promote available opportunities for electronics recycling.
- Government should assist in system and infrastructure design.

**3) Financing**

The financing of the system should be done at the front end, either through a fee paid by consumers at the time of purchase or built in to the cost of the electronics by the manufacturers, or a combination of the two. Financing must be adequate to:

- Provide for an environmentally sound recycling system.
- Cover a base level of services available throughout the country (urban and rural) that includes collection, transportation and processing costs.
- Encourage a diversity of entities to provide easy and convenient collection opportunities to customers, without charging an end of life fee for the service.
- Provide an incentive to manufacturers to make their future products more reusable, less toxic, and more recyclable, while creating markets for recycled materials derived from electronic products.

**4) The role of the federal government**

- Pass enabling legislation as needed.
- Improve regulatory environment to provide needed environmental safeguards while encouraging success of the system/infrastructure.

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JOHN ELIAS BALDACCI  
GOVERNOR

STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DAWN R. GALLAGHER  
COMMISSIONER

October 27, 2004

Ms. Laureen Daly

Office of Technology Policy

Technology Administration HCHB 4817

1401 Constitution Avenue, N.W.

Washington, DC 20230

Re: Response to notice to solicitation of comments on electronics recycling

Dear Ms. Daly,

Thank you for this opportunity to comment on specific issues regarding electronics recycling. Earlier this year, the State of Maine enacted a new law titled "An Act to Protect Public Health and the Environment by Providing for a System of Shared Responsibility for the Safe Collection and Recycling of Electronics". This law recognizes that the management of electronic waste is a growing challenge to local governments and that good public policy is needed to ensure the recycling and environmentally sound management of the materials, including toxics, that make up this waste stream.

Maine's e-waste law provides for a system of collection, environmentally sound management, and recycling of computer monitors and televisions, and delineates responsibilities for municipalities, consolidators, recyclers, manufacturers, retailers, and state government. This system of shared responsibility assigns responsibilities appropriate to the strengths of each of these sectors:

- Municipalities are responsible for defining the initial collection system;
- Consolidators provide consolidation, transportation, tracking and billing services;
  - Recyclers ensure the environmentally sound management of e-waste;
- Manufacturers are responsible for funding the recycling of their own products, providing an opportunity for recouping savings from reducing toxics in their products and designing for recycling;

- Retailers cannot offer for sale televisions and computer monitors of any manufacturers not in compliance with the law; and
- State government provides the criteria for environmentally sound management; sets parameters for allowable costs for consolidation, transportation and recycling; and implements compliance and enforcement activities necessary to provide a level playing field for all parties.

Additional information on Maine's e-waste law is available on the web at [www/maine.gov/dep/rwm/ewaste](http://www/maine.gov/dep/rwm/ewaste).

The following are the Maine Department of Environmental Protection's comments on each of the specific areas you identified.

### **(1) Definition of covered products**

- At a minimum, the definition of covered products should include electronics that are commonly found in households and that have been found to contain significant amounts of toxics. This includes all televisions and computer monitors because of the high levels of lead and/or the presence of mercury and other toxics in them. Additional items to include are those that have been found to often fail the TCLP hazardous waste screening test, such as cell phones and computer central processing units.

### **(2) Collection and the role of government in collection:**

- Government should not be required to bear the costs of ensuring that electronic wastes are appropriately recycled. At the most, the cost of any responsibility assigned to local government should not exceed the current costs for local management of solid waste.

In Maine's "shared responsibility" model, local government's role is limited to defining the system that their residents use to ensure household televisions and computer monitors are delivered to a conveniently-located point of consolidation. The Maine law further defines consolidation as a full 40-foot truck trailer, i.e., the collection of a 40-foot trailer truck load accomplishes the purpose of convenient consolidation which is to achieve economies of scale for transportation to recycling. Local government determines how best to meet this responsibility. The most common models in Maine are to provide either on-going or annual one-day collection at a local solid waste facility plus transport to consolidation, or to arrange for residents to deliver their waste computer monitors and televisions directly to a local "bricks-and-mortar" privately-operated consolidation facility. This responsibility is parallel to, and is estimated to cost approximately the same as, the current municipal responsibility for handling and disposal of solid waste generated by residents.

- The collection system must be convenient. It should be as easy to recycle a computer (TV, cell phone, etc.) as it is to buy one.

### **(3) Financing collection, transportation and recycling, financing for orphan products, financing historical products versus future products, and the role of government, the electronics industry, and intermediaries in financing**

- At the least, each manufacturer (brand owner) should be individually responsible for financing the end-of-life consolidation, transportation, recycling, reuse and disposal of their future and historical products. This could be done individually or through a Third Party Organization (TPO) made up of manufacturers. Federal, state and local government should not be responsible for financing or managing the financing of the consolidation, transportation and recycling of electronic wastes.

All costs for end-of-life management of products should be considered part of the manufacturer's regular cost of doing business and included in the price of the product at the time of sale (cost internalization). This type of front-end financing gives manufacturers the feedback and financial incentive to design products that are less toxic and more easily recycled while creating markets for recycled materials derived from electronic products.

- Orphan products should be financed collectively by the industry, e.g. pro-rated by manufacturer market share at the time the waste management costs are incurred. This is the model that has been adopted and will be implemented by the State of Maine beginning January 1, 2006.

- Recycling and reuse programs should not be funded with end-of-life user fees. Maine municipalities that have voluntarily undertaken managing TVs and computer monitors for recycling have found that end-of-life fees discourage return for recycling and result in illegal roadside dumping.
- Recycling and reuse programs should not be funded with an advance recovery fee (ARF) managed by federal or state governments. An ARF system places all the costs of waste management on consumers and government without providing manufacturers with any incentive to reduce the toxics content and increase the ease of recycling of their products. It is also a system that would increase government bureaucracy and that would be susceptible to diversion of funds for other government programs.

**(4) The role of the federal government in creating a national recycling plan**

- Ban the disposal of unprocessed covered electronic products and hazardous electronic waste.
- Pass federal producer responsibility legislation so that all competing producers within a product category are mandated to participate and meet the same high standards. This will provide a level playing field for all manufacturers and ensure that there are no “free riders.”
- Set environmentally sound management guidelines for recycling and provide a system of auditing to ensure that dismantlers and recyclers are evaluated against these guidelines. These guidelines should include a ban on the export of hazardous electronic waste to developing countries either for disposal or for recycling.
- Provide sufficient resources to enforce existing RCRA and CERCLA laws and regulations.

Ultimately, the goal of the federal government should be to adopt laws that support achieving zero-waste manufacturing, including the design of products for recycling, i.e., all products can be efficiently managed at the end of life to provide feedstock for new products.

The State of Maine is interested in providing you with any information you need to ensure that federal action on electronic waste meets and does not weaken the standards already achieved in Maine law. Please contact me if you have any questions or would like additional information on Maine’s e-waste law. Thank you again for this opportunity to provide comments on this critical waste management issue.

Sincerely,

Carole Cifrino, E-Waste Program Manager

Bureau of Remediation & Waste Management

Maine Department of Environmental Protection

17 State House Station

Augusta, Maine 04333

## ***Technology Administration***

September 30, 2004

Re: For you review and comment - Draft *Environmentally Sound Management Guidelines* for recycling household computer monitors and televisions generated in Maine

Dear Interested Parties:

Last year Maine adopted a new law that requires the recycling of computer monitors and televisions generated as waste by Maine households. A provision of that law requires the Maine Department of Environmental Protection (DEP) to publish environmentally sound management guidelines for the recycling of these wastes. Any dismantler/recycler that accepts household computer monitors and televisions from Maine for recycling must provide a sworn certification that it meets these standards to consolidators that ship these wastes from Maine. The specific language from the law reads:

### **38 MRSA §1609.5.C**

A recycling and dismantling facility shall provide to a consolidation facility a sworn certification that its handling, processing, refurbishment and recycling of covered electronic devices meet guidelines for environmentally sound management published by the department.

We are sending you the first draft of Maine DEP's proposed *Guidelines for the Environmentally Sound Management of Electronic Wastes*. Please review these proposed guidelines and submit any comments you may have to me by October 29, 2004. My contact information is:

Carole Cifrino	Phone: 207-287-7720
MaineDEP	Fax: 207-287-7826
17 State House Station	e-mail: carole.a.cifrino@maine.gov
Augusta, ME 04333	

We will review all comments received, and provide a second draft for review and comment to interested parties in mid-November. Comments on the second draft will be due no later than December 10, 2004 so that we may publish the final guidelines before the end of the year.

Please let me know if you are not interested in receiving future mailings as part of Maine's process to develop these guidelines, or if we should direct mailings on this topic to a different person in your company. If you have any questions on these draft guidelines or on the process for developing the guidelines, please contact me. Thank you for your interest and any help you provide in this process.

Sincerely,

Carole Cifrino, Environmental Specialist  
Bureau of Remediation & Waste Management



**Maine Department of Environmental Protection**  
**Guidelines for the Environmentally Sound Management of Electronic Wastes**

I certify that \_\_\_\_\_ (name of company) \_\_\_\_\_ meets the following environmentally sound management standards for the handling, processing, refurbishment and recycling of electronic wastes it performs. Any records maintained in accordance with these standards, including copies of applicable licenses of downstream markets, as well as relevant transportation documents (e.g. manifests and bills of lading) shall be made available for viewing by clients and authorized government officials upon request.

\_\_\_\_\_  
(signature)

\_\_\_\_\_  
(title)

1. We comply with all federal, state and local regulations, including federal and state minimum wage laws, and is properly authorized by all appropriate governing authorities to perform the handling, processing, refurbishment and recycling of electronic wastes.
2. We implement sufficient measures to safeguard occupational and environmental health and safety, through adherence to the following:
  - a. Environmental health & safety (EH&S) training of personnel, including training with regard to material and equipment handling, worker exposure, controlling releases and safety and emergency procedures.
  - b. An up-to-date, written hazardous materials identification and management plan.
  - c. An up-to-date, written plan for reporting and responding to exceptional pollutant releases, including emergencies such as accidents, spills, fires, and explosions.
  - d. Liability insurance for accidents and other emergencies.
  - e. Documentation that completion of an EH&S audit is completed on an annual basis.
3. We maintain on file proof of procurement of workers compensation/employers' liability insurance.
4. We agree to provide adequate assurance (e.g. bonds) to cover environmental and other costs of the closure of our facility, including the cleanup of stockpiled equipment and materials. Additionally, we maintain liability insurance for accidents and incidents involving wastes under our control and ownership. Additionally we will ensure due diligence throughout the product chain.
5. We have in place a documented environmental management system (EMS), appropriate in level of detail and documentation to the scale and function of the facility, including documented regular self-audits and/or inspections of its environmental compliance.
6. We have the appropriate equipment for proper processing of the incoming materials as well as controlling environmental releases. We manage all materials to minimize adverse exposures to workers and releases to the environment. Dismantling operations, as well as storage of any components that contain hazardous substances, are conducted indoors over impervious floors. Storage areas are adequate to hold all processed and unprocessed inventory. If we use heat to soften solder and/or if we shred various PC components, our operations are designed to control hazardous air emissions.
7. We have in place a system for identifying and properly managing hazardous components (e.g., batteries) that are removed from e-wastes during disassembly. We remove and properly manage all hazardous and other components requiring special handling from used electronics in accordance with or exceeding all federal, state, and local regulations. We agree to provide visible tracking of hazardous e-waste throughout the product recycling chain, including the final disposition of all hazardous waste materials. We do not allow any hazardous e-waste we handle to be sent to solid waste (non-hazardous waste) landfills or incinerators for disposal or energy recovery, either directly or through intermediaries.

## *Technology Administration*

8. We will assure that all electronic products and components are processed and recycled in an environmentally sound manner at facilities that are fully licensed for that purpose by all appropriate governing authorities.
9. We have a regularly implemented and documented monitoring and record keeping program that tracks key process parameters, compliance with relevant safety procedures, effluents and emissions, and incoming, stored and outgoing materials and wastes. We also maintain a record of the chain of custody for downstream markets and applicable supporting documentation that downstream markets for designated electronics meet guidelines that are comparable with and generally equivalent to these standards.

On an annual basis, we will provide our clients that ship e-waste to us from Maine with the following data:

- Percent of computer monitors and televisions that are sent for reuse;
  - Percent of components recovered;
  - Percent and verification of materials recycled;
  - Residual rates by material; and
  - Fate of materials not recycled
10. We comply with federal and international law regarding the export of products or materials. Consistent with decisions of the international Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, we will not allow the export of hazardous e-waste we handle from developed to developing countries (i.e., any country not belonging to either the European Union, the Organization of Economic Cooperation and Development, and Lichtenstein), either directly or through intermediaries.

All transactions that involve the transboundary shipment of used televisions and computer monitors are conducted based on contracts (or equivalent commercial arrangements) made in advance that detail the quantity and nature of the materials to be shipped. Export of materials to a foreign country (directly or indirectly through downstream market contractors):

- will include only whole products, working or requiring minor repair, destined for reuse with respect to their original purpose and verification must be provided that specifies that the recipient has the capability to test and has the markets to sell or donate items for reuse;
- will be materials that have been prepared for processing, appropriate for the intended use; and/or
- will be exported to companies or facilities owned or controlled by the original equipment manufacturer (OEM). The OEMs will be required to satisfy the same environmental standards for the management of these materials.

Also, we will maintain the following export records on file for a minimum of three years:

- a. Destination (including facility name and address) to which shipment is exported.
- b. Shipment contents and volumes.
- c. Specific use of contents by the destination facility.
- d. Specifications required by the destination facility in relation to shipment contents and how the \_\_\_\_\_ (name of company) \_\_\_\_\_ will ensure meeting these specifications.
- e. Manner by which \_\_\_\_\_ (name of company) \_\_\_\_\_ is ensuring appropriate handling, by destination facility, of shipment materials in accordance to guidelines and requirements that are comparable with and generally equivalent to those that apply to \_\_\_\_\_ (name of company) \_\_\_\_\_.
- f. Manner by which \_\_\_\_\_ (name of company) \_\_\_\_\_ is ensuring any waste produced at the destination facility will be handled in accordance with guidelines and requirements that are comparable with and generally equivalent to those that apply to \_\_\_\_\_ (name of company) \_\_\_\_\_.
- g. Assurance that all shipments for export, as applicable to the \_\_\_\_\_ (name of company) \_\_\_\_\_, are legal and satisfy all applicable laws in the destination country.

Manufacturers' Coalition

Email Received 10/26/2004

Ms. Daly:

Sorry for the delay in responding. I am attaching the most recent version of a two-page overview of our Coalition's position on electronic product recycling. Hopefully this will be included with the final report.

Sincerely,

David A. Thompson  
Director  
Corporate Environmental Department 3G-4  
Matsushita Electric Corporation of America

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## An ARF Based Electronic Product Reuse & Recycling System



### Coalition Members

Hitachi America  
IBM Corporation  
JVC America  
Mitsubishi Digital Electronics America  
Panasonic (Matsushita Electric)  
Philips Consumer Electronics North America

Samsung Electronics America  
Sanyo Fisher Company  
Sharp Electronics  
Sony Electronics  
Thomson Inc. (RCA)

The Manufacturers' Coalition proposes a comprehensive financing system for the management of end-of-life electronics that utilizes an Advanced Recycling Fee (ARF). The Coalition model is based on the national solution developed by the National Electronic Product Stewardship Initiative (NEPSI). The NEPSI model balances the diverse set of stakeholder interests and is supported by the great majority of participants. This model is built on three core principles:

**Principle #1** A shared responsibility system should involve the active participation of the various stakeholders in ways that they can best help deliver the needed services. This includes manufacturers, government, retailers, recyclers, and the consumer. Electronics manufacturers will play a pivotal role through participating in the management of the recycling system, collecting the fee on direct sales, and providing recycling information to customers. To improve product design, the Coalition supports the development of design standards and environmental procurement criteria. Manufacturers also wish to explore how to promote the development of markets for recovered materials through product design.

**Principle #2** A sustainable solution to this urgent problem must be a national system. States can contribute to a national solution by adopting consistent approaches, founded on principles of fairness and efficiency, that transition to a national system when one is implemented.

**Principle #3** A comprehensive solution should assure that the end-of-life infrastructure – from local collectors and reuse enterprises through national recycling markets – is adequately funded and efficiently managed to deliver environmentally responsible, high reliability service at the lowest practical cost.



**An ARF Provides the Greatest Number of Benefits**

- An ARF, because it provides 'soup to nuts' funding, will build the soundest infrastructure, provide the best service for the public, and place the least financial burden on local communities, and on consumers themselves.
- Because 100 percent of the funding is based on current sales of covered products, the ARF assures the fair distribution of financial responsibility amongst product brands. And it is fair for consumers as only users of new electronics will pay for their recycling, not all taxpayers.
- An effectively run ARF system delivers the lowest cost for consumers by employing competitive contracting for the procurement of transportation and processing, and by creating economies of scale. The system also builds on the existing local infrastructure for collection, reuse and consolidation.
- The ARF provides reliable cost coverage for the substantial historic backlog of qualifying products, including orphan products for which the brand owner is no longer in business.
- The ARF can be implemented effectively at the state level, and it will position a state to readily transition to the national program when implemented.

**Key Features of the Coalition Proposal**

In short, the system will include the following features:

- It will cover personal and portable computers, monitors, desktop printers and multi-function devices, and TVs from both consumers and businesses.
  - Recycling logistics and processing will be procured through competitive contracting, based on audited environmental standards, to assure the lowest cost, while providing a high level of service.
  - An ARF will provide funds for local collection and it will utilize existing businesses and organizations, offering diverse and convenient service.
  - Product reuse will be provided by local enterprises, e.g. charities, non-profits and businesses.
  - Management of the funds and contracting for service will be performed by a private, not-for-profit third party organization (TPO), in which a central role will be played by manufacturers, with the participation of retailers, government, environmental organizations and other stakeholders.
  - Public education will be provided by statewide promotional materials and local networks.
- No better public educational tool can be found than the ARF itself.

**Why Not the Alternative – A Manufacturer Responsibility Mandate?**

*WE UNDERSTAND THE APPEAL OF THIS APPARENTLY SIMPLE APPROACH, BUT WE BELIEVE THAT IT FAILS TO DELIVER ON ITS PROMISE.*

Consider:

- These proposed programs – and none have yet been implemented – generally do not cover collection costs. These costs are left for local governments, many of whom already face very difficult choices.
- The financing system needs to work well and be fair for all brands. It is a complex electronics marketplace, including large and very small companies, domestic and foreign manufacturers, long-term producers and those that come and go quickly, and branded and unbranded products. Enforcement of a mandate will be complex and costly. And inevitably some companies will escape responsibility under a "manufacturer mandate" system.
- Those who promote a manufacturer mandate promise an incentive for environmental design. Indeed, environmental design is very important. However, the financial savings to the manufacturer from improved recycling efficiencies are small, and the benefits are received many years after the sale. Moreover, in collection systems brands are mixed, and without expensive sorting, the benefits of improved design will not be experienced by those that made improvements.
- Note that the companies that promote a manufacturer mandate, those with the largest current market share, will experience competitive advantage by going it alone. The companies that most need a design incentive, small and foreign brands, will work through collectives, which would blunt any design incentive.

In sum, a manufacturer mandate leaves local communities with a new financial burden, fails to deliver a design incentive for industry, will be problematic to enforce, and unfairly advantages the large market-share producers and newer market entrants.

## *Technology Administration*

### **Manufacturers' Responsibilities under the ARF**

Some say that the ARF lets producers off the hook.

On the contrary, manufacturers propose to play several important roles to make the ARF system work:

- Participate in managing the system through the TPO.
- Provide information directly to customers on proper end-of-life management, through notices in product literature and on corporate web sites.
- Improve product design by adopting new worldwide standards to eliminate toxics.
- Participate in the creation of an environmental purchasing label, such as the Electronic Product Environmental Assessment Tool, especially for government and institutions.
- Assist recyclers with information on product features that will affect end-of-life management.

*Members of the Coalition recognize that there are complexities in an ARF, such as coverage for internet sales and the formation of a private TPO. The members are committed to seeking a fair and equitable distribution of the ARF that captures 100% of covered products and that firmly establishes fair market conditions.*

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October 27, 2004

Laureen Daly  
Office of Technology Policy, Technology Administration  
HCHB 4817  
1401 Constitution Avenue, N.W.  
Washington, DC 20230

Dear Ms. Daly:

On behalf of the National Recycling Coalition, thank you for the opportunity to provide written comments on "Technology Recycling: Achieving Consensus for Stakeholders".

The Coalition is a not-for-profit organization that was established in 1978. We have approximately 5,000 members from around the country. Our membership includes local, regional & state recycling coordinators, collection & processing companies; manufacturers that utilize collected materials; consumer product companies, and regional, state and national government agencies that oversee waste management.

We are directly involved in several key partnerships and policy development initiatives to devise a national system for e-scrap management. NRC is working closely with Dell on a variety of efforts to help build the electronics recycling and reuse infrastructure, including educational workshops and a community grant program that has distribute nearly \$400,000 to non-profit organizations across the U.S. for electronics collection events. I am representing NRC at the table for the National Electronics Product Stewardship Initiative (NEPSI) as a key nongovernmental organizational representative. NEPSI is developing nationwide system to maximize the collection, reuse, and recycling of used electronics. NRC is also partner in EPA's new initiative, called "Plug-In To Recycling", and was the first non-governmental organization named a partner. Under this initiative, EPA and NRC are working with industry, retailers, government and others to educate the public about the need to recycle e-waste, and in doing so, help to foster the development of more opportunities for the public to recycle and reuse their e-waste.

In representing a diverse coalition of stakeholders in the issue, the NRC has a vital role to play in shaping the debate and driving the future of product stewardship policy for electronics. The NRC applauds the leadership shown by the Department of Commerce on this critical issue, and we believe a national solution to the proper management of e-scrap is absolutely necessary. Without a national solution in place, continued state-level legislative efforts will create a myriad of regulatory requirements, potentially confusing the public and increasing the costs of e-scrap recycling and reuse systems.

NRC believes that the long-term solution is a shared responsibility system for end of life management, which means that each party of the system has a responsibility that is relative to its role. Manufacturers, retailers, government and consumers all share in a responsible end-of-life program – and should play a key role in ensuring the system is a success. NEPSI developed the concept of "Basic Service" that is the foundation of any system no matter what the funding mechanism is. That basic service included education/outreach, collection from consumer to consolidation points, and transportation to processing/recycling/reuse. NRC believes this basic service should be included in a national system.



## *Technology Administration*

NRC has identified several key principles of effective and equitable product stewardship policies for electronics. We urge the federal government to play an active and integral role in designing and implementing policies that adhere to the following principles:

- Encourage practices that follow the solid waste management hierarchy, and give highest priority to reduction in the use of hazardous and non-hazardous material and electronic product reuse, followed by recycling, with disposal as the least preferred option.
- Establish aggressive goals that will result in the design of electronic products that maximize reuse and recyclability and minimize environmental impacts throughout the life cycle of the product.
- Ensure that all parties that design, produce, sell, or use electronic products have a share in the financial and physical responsibility for minimizing the product's environmental impact throughout all stages of the products' life cycle.
- Internalize the costs of recovering and managing electronic products at the end of life into the costs of producing and selling such products, so that those costs are not solely borne by government.
- Formally bind parties to achieving goals through signed covenants, agreements, legislation, regulation, or other types of public commitment statements that ensure accountability if goals are unmet.
- Provide incentives and disincentives to encourage compliance among all stakeholder parties.
- Ensure that legacy electronic waste (products discarded prior to effective date of take-back requirements) and orphan waste (products from companies no longer in existence) will be managed in accordance with, as an integral element of, the product stewardship policy.
- Grant flexibility to parties responsible for addressing environmental impacts of electronic products in determining how to best address those impacts.
- Create reuse and recycling options for electronic products that are convenient and cost-effective for consumers and businesses.
- Protect against socially and environmentally unsound management methods of end-of-life electronic products in the US and in foreign countries.

We believe now is the time to move forward with national legislation, and the NRC stands ready and committed to work Congressional leaders, the Department of Commerce and other key decision makers on formulating this new nation system.

Thanks again for the opportunity to provide input on these critical issues. I look forward to working with you on devising solutions to e-scrap management.

Sincerely,

A handwritten signature in black ink, appearing to read "Kate Krebs", with a long, sweeping horizontal line extending to the right.

Kate Krebs  
Executive Director



4301 Connecticut Avenue, N.W., Suite 300 • Washington, D.C. • 20008 • Phone: 202-244-4700 • Fax: 202-364-3792

October 27, 2004

Laureen Daly  
Office of Technology Policy  
Technology Administration HCHB 4817  
1401 Constitution Avenue, NW  
Washington, DC 20230

Dear Ms. Daly,

The National Solid Wastes Management Association (NSWMA) is a trade association representing the private sector solid waste collection and disposal industry and the private sector recycling collection and processing industry. Our member companies have solid waste and recycling operations in all fifty states. This letter is in response to the Technology Administration's request for comments on electronics recycling.

Private sector waste hauling and recycling companies are extensively involved in collecting and processing recyclables. In many cases, private sector companies collect and process residential recyclables under contract with local governments. In some cases, public sector crews collect the recyclables and either process them or contract out the processing. In either case, residential customers pay for the cost of recycling along with the cost of other solid waste services.

When America's recycling boom started in the late 1980's, the private and public sectors accepted our responsibility to provide this service. We organized residential recycling programs and learned how to efficiently collect and process cans, glass and plastic bottles and newspapers, corrugated boxes, and "mixed" paper.

Recycling is a worthy and much needed way to manage part of the waste stream. However, the implementation of residential recycling programs was an unfunded mandate for local governments and their private sector partners. Solid waste management expenses went up as local governments and their partners bought new collection vehicles, hired new crews and built processing facilities. NSWMA urges the Technology Administration to learn from the public and private sector's experience in implementing residential recycling before designing residential electronics recycling programs. NSWMA urges the Technology Administration to go slowly and deliberately and to ensure that electronics product recycling does not become an unfunded mandate that adds new solid waste management costs to revenue-short local governments.

In April, 2003, NSWMA adopted the following policy on electronic waste recycling in response to increased interest by state legislatures in promoting the recycling of discarded electronics products:

"The National Solid Wastes Management Association (NSWMA), a trade association representing the solid waste and recycling industries, supports legislation providing financial support for mandated recycling of electronic products. These products, known as "e-waste" when they are discarded, are currently banned from disposal in two states. Over the last three years, legislation has been introduced at the Federal level and in more than a dozen states requiring either "take back" programs or advance recycling fees for various types of electronics products. Under "take back" legislation, the product manufacturer is responsible for taking back the electronics products and guaranteeing that they are either safely recycled or disposed. Under an advance recycling fee, consumers pay a fee when they purchase an electronic product. The fee goes into a fund to financially support recycling of those products.

A decade ago, during the last round of significant recycling legislation, many states passed legislation requiring recycling at the local level. Few of these states also provided financial support for these programs. As a result, recycling became an unfunded mandate for local governments and their contracted hauling and recycling companies. NSWMA

## ***Technology Administration***

believes that legislation mandating e-waste recycling or banning e-waste from disposal must also provide a means for safely and economically recycling these products. This should include building upon existing solid waste and recycling infrastructure for e-waste collection and processing; providing financial support for e-waste recycling through either an advance recycling fee or take-back provisions; ensuring environmental, health and safety standards for proper management of collected materials including reporting and documentation procedures for end-markets; and supporting programs to develop new processing technologies, new end markets (including the possibility of recycled content provisions in new electronics products); and if take-back programs are adopted, the use of rates and dates to ensure accountability.”

Due to the relatively short time allowed for responses, NSWMA is unable to respond to the four specific issues in the request. However, we strongly believe that the experience of the private sector and our local government partners in developing residential recycling programs should guide the development of recycling policy for electronics products.

For additional information about e-waste and the solid waste and recycling industry, please contact Chaz Miller, NSWMA’s Director of State Programs at 202-364-3742 or [cmiller@envasns.org](mailto:cmiller@envasns.org).

Sincerely

Chaz Miller  
Director, State Programs  
National Solid Wastes Management Association

October 27, 2004

Ms. Laureen Daly  
Office of Technology Policy  
Technology Administration HCHB 4817  
1401 Constitution Avenue, N.W.  
Washington, DC 20230

Dear Ms. Daly,

I write to offer some brief comments concerning electronics recycling. My organization, the Natural Resources Council of Maine, supports a national electronics system to improve recovery and recycling of obsolete electronics. The goal should be to safely recycle 100% of all units that contain persistent bioaccumulative toxins. There has been extensive work elsewhere on these matters and good working models exist in the European Union's Directive on Waste Electrical and Electronic Equipment (WEEE) and its Restriction of the use of certain Hazardous Substances (RoHS).

We have conducted extensive review of literature on the subject. We have also participated in stakeholders and a legislative process that led to the enactment earlier this year of Maine's electronic waste law. The law was enacted to insure that the lead, beryllium, mercury, cadmium, PVC and brominated flame retardants currently found in electronic equipment would be kept out of Maine's landfills and incinerators. The state also was not want to encourage the current practice of exporting hazardous electronic waste to developing countries. Maine would like to ensure that electronic waste generated inside its borders is responsibly managed. Our experience has led us to conclude that the best system will incorporate principles of what is known as "extended producer responsibility." This is a foundation of the WEEE Directive. Some of the major feature of the system would include the following:

Electronics manufacturers should be responsible for the entire end-of-life cycle from collection, consolidation, transportation, reuse, and recycling.

The system should not be subsidized by taxpayers on the federal, state or local level.

Collection, particularly of consumer electronics, needs to be convenient and free of charges.

Manufacturers (the brand name owners) should be held individually responsible at the end-of-life for the products they manufacture and sell.

To the extent that costs are passed on to consumers these should be internalized in the cost of the product not as additional fees collected separately by retailers.

The system needs to incorporate standards for environmentally sound management, direct reuse and recycling.

The program should include enforcement of a ban on the export of hazardous electronic waste to developing countries.

The attached document is a draft of Environmentally Sound Management Guidelines from Maine's Department of Environmental Protection. The simple fact that one small state is forced to develop and later to enforce such guidelines is testament to the need for a national system to require responsible management of end-of-life electronics. The federal government is in the best position to adopt federal producer responsibility legislation that will ensure a level playing field for all manufacturers. The first step should be a ban on disposal of electronic products and electronic waste containing PBTs.

Thank you for accepting these comments.

Very truly yours,  
Jon Hinck,  
Staff Attorney  
Natural Resources Council of Maine  
3 Wade Street  
Augusta, Maine 04330